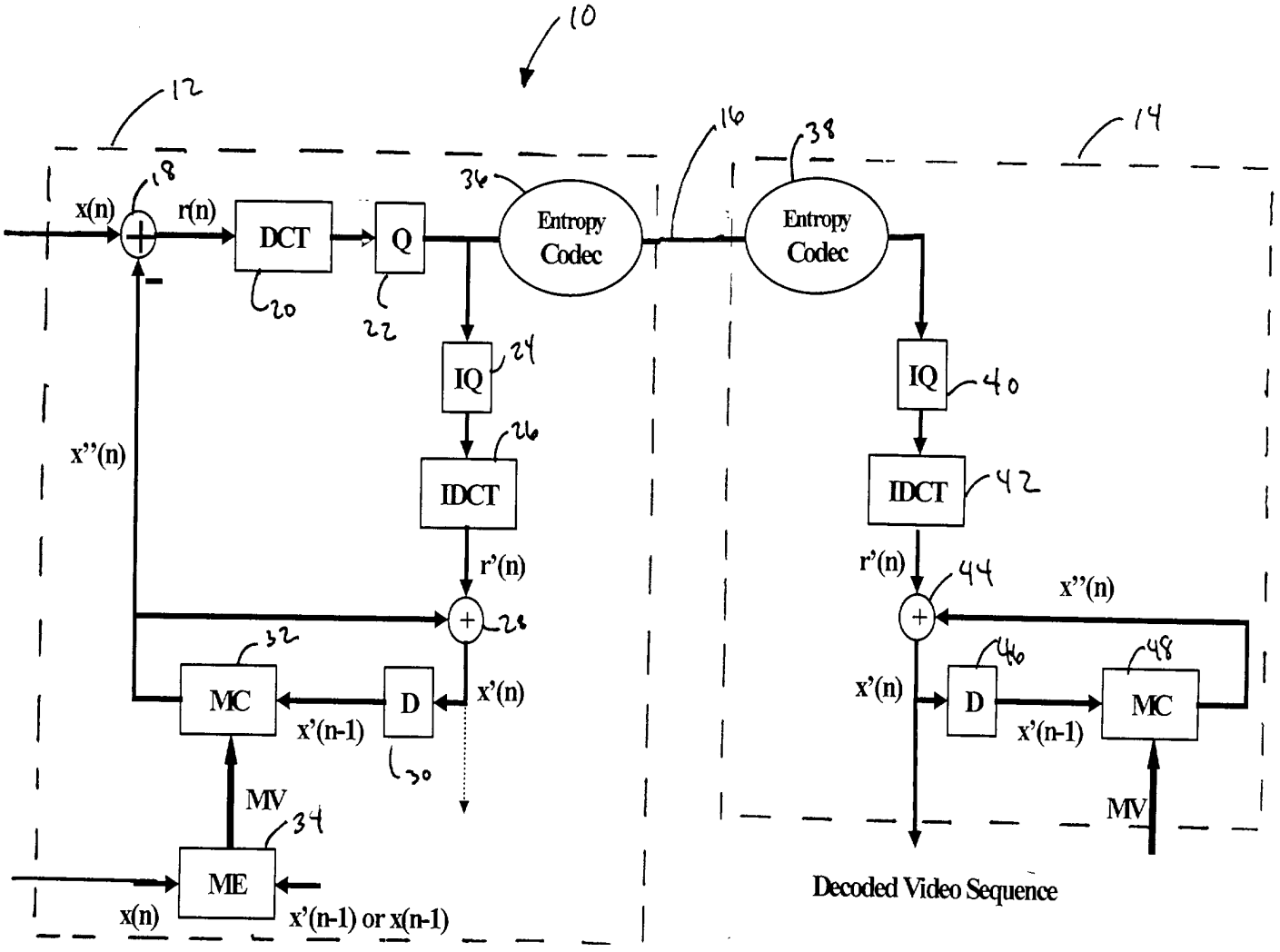
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
x(n)
r(n)
DCT
Q
Entropy Codec
Entropy Codec
IQ
IDCT
r'(n)
x''(n)
MC
D
x'(n)
x'(n-1)
MV
ME
x(n)
x'(n-1) or x(n-1)
IQ
IDCT
r'(n)
x''(n)
x'(n)
D
MC
x'(n-1)
MV
Decoded Video Sequence

FIG. 1

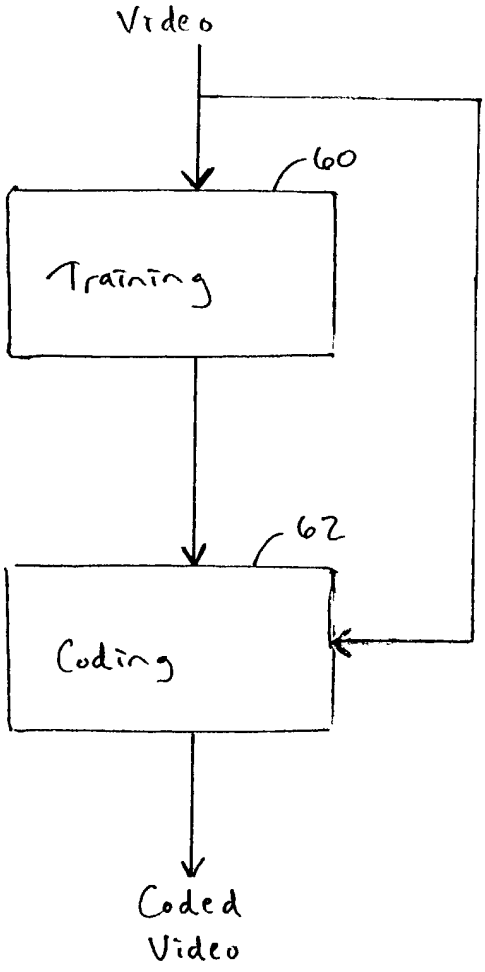

Fig. 2

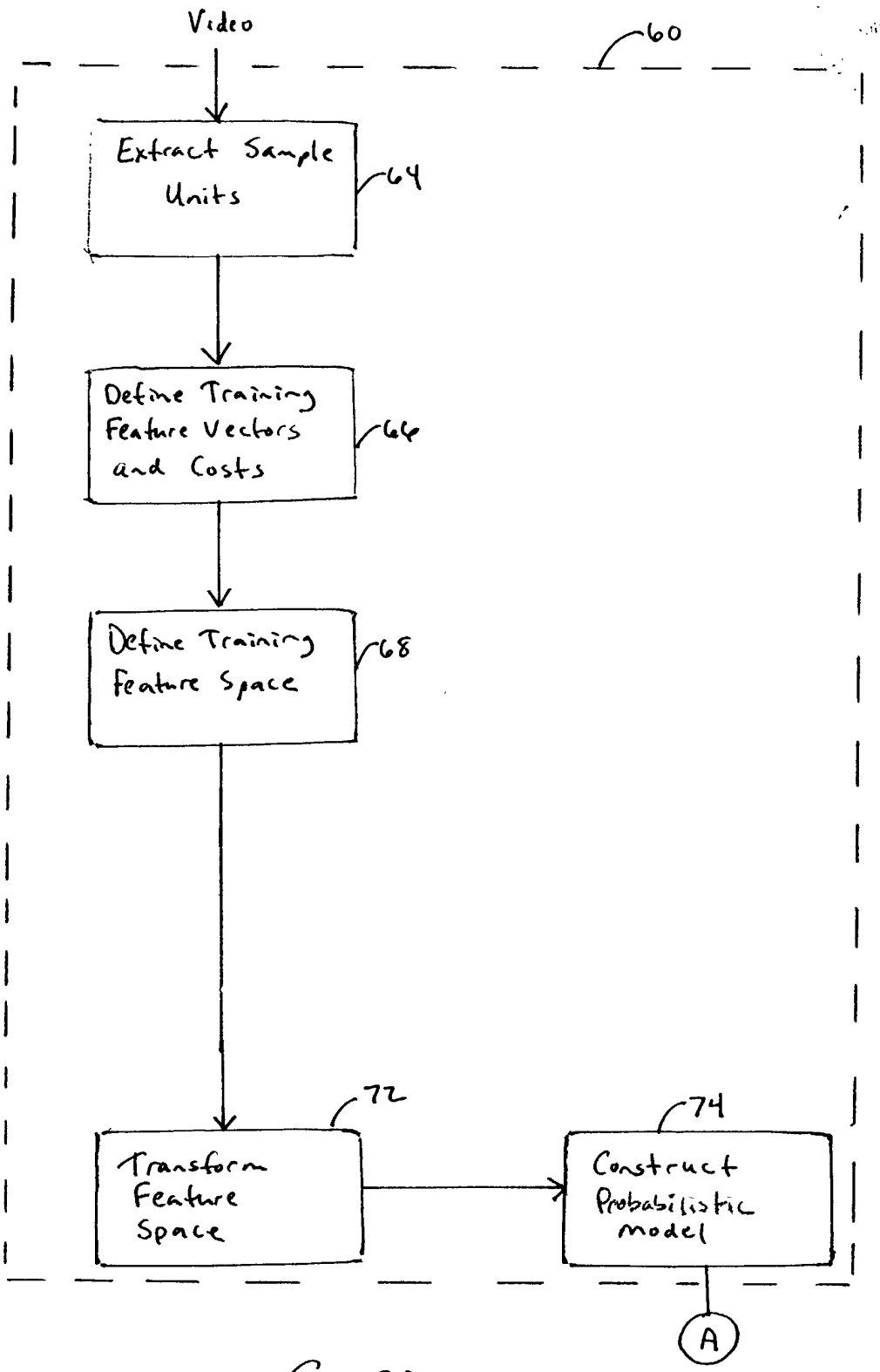
Video
60
Extract Sample Units
64
Define Training Feature Vectors and Costs
66
Define Training Feature Space
68
72
Transform Feature Space
74
Construct Probabilistic model
A

Fig. 3A

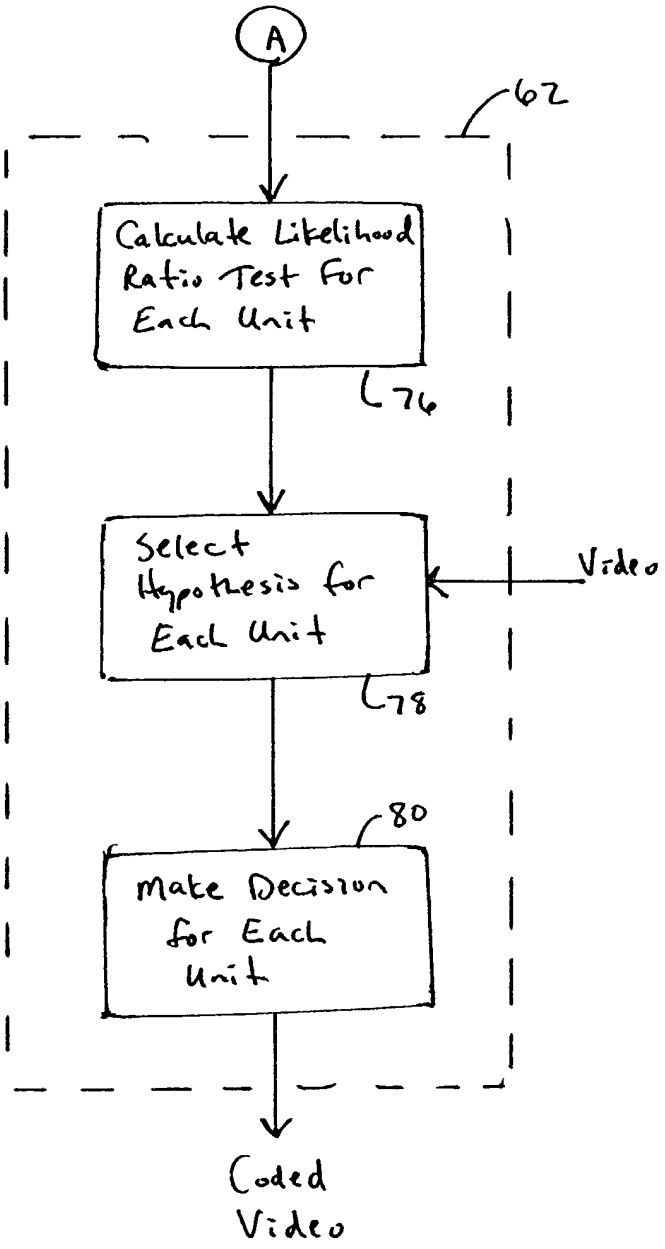
A
62
Calculate Likelihood Ratio Test For Each Unit
76
Select Hypothesis for Each Unit
Video
78
80
Make Decision for Each Unit
Coded Video

Fig. 3B

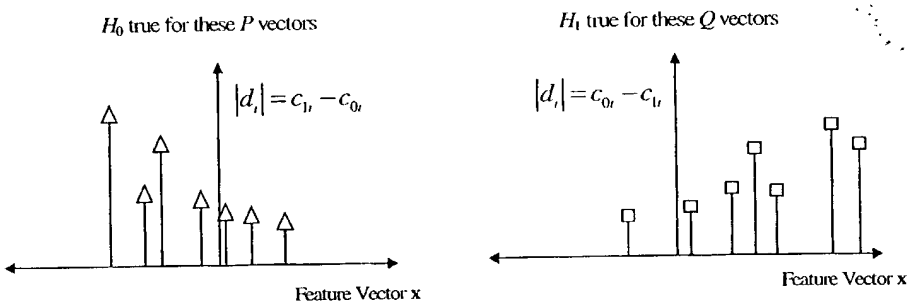
H_0 true for these P vectors
$|d_i| = c_{1i} - c_{0i}$
Feature Vector x
H_1 true for these Q vectors
$|d_i| = c_{0i} - c_{1i}$
Feature Vector x

Fig. 4

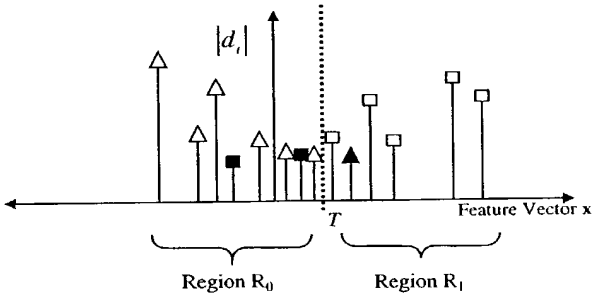
$|d_i|$
Feature Vector x
T
Region R_0
Region R_1

Fig. 5

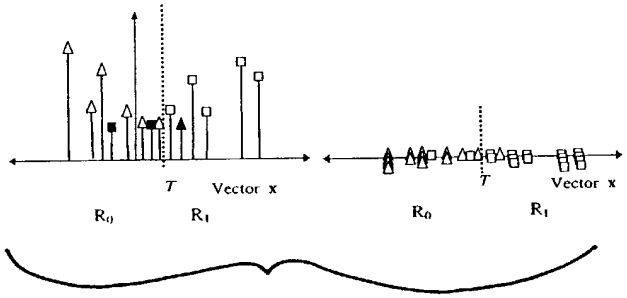

Fig. 6

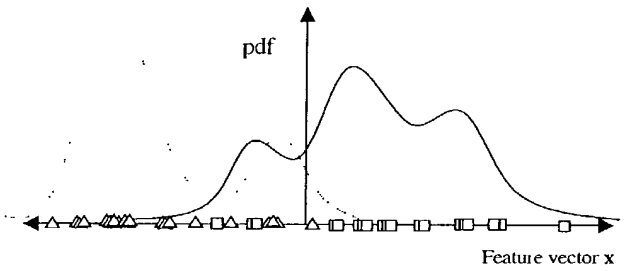

Fig. 7

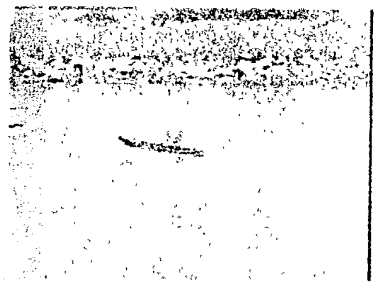

Fig. 8

Fig. 9

Fig. 10

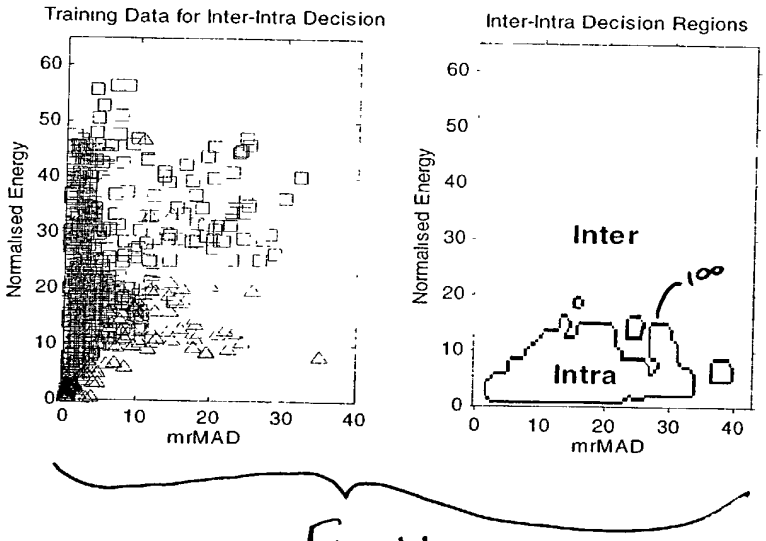

Fig. 11

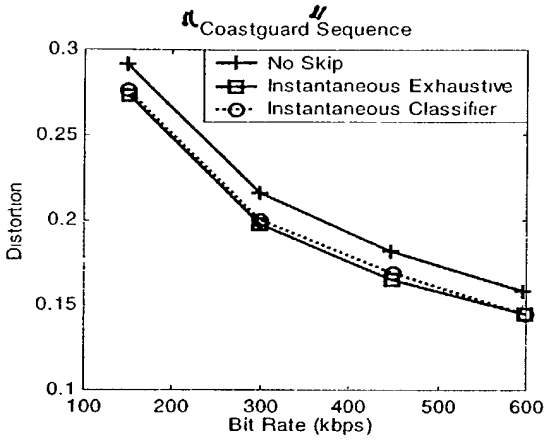

Fig. 12

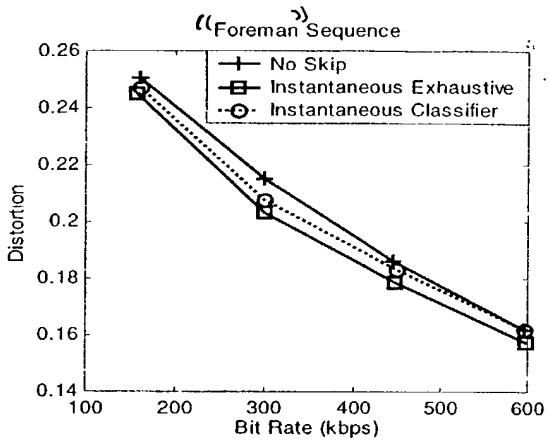

Fig. 13

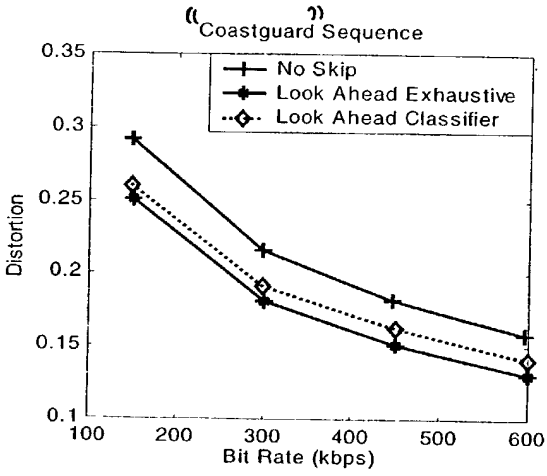

Fig. 14

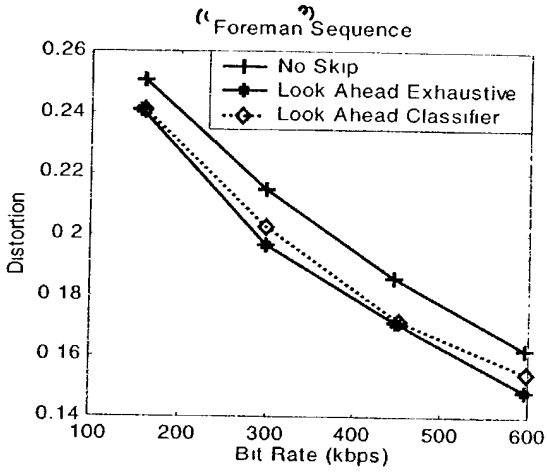

Fig. 15

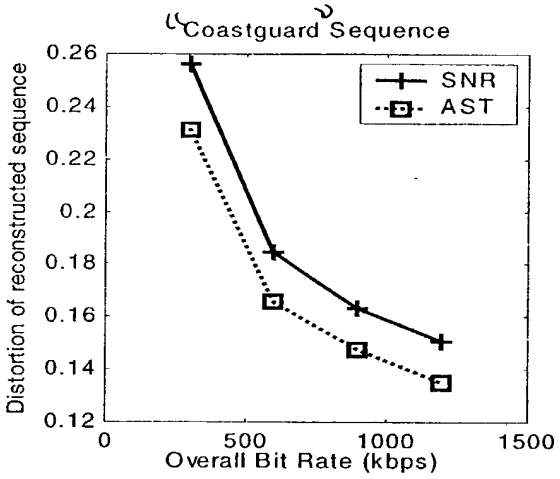

Fig. 16

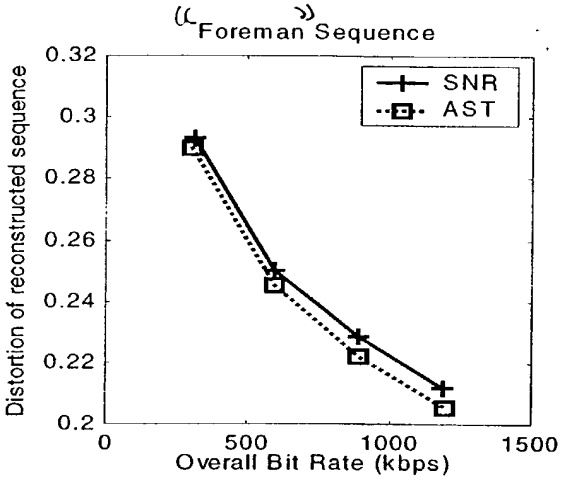

Fig. 17

Fig. 18

Fig. 19

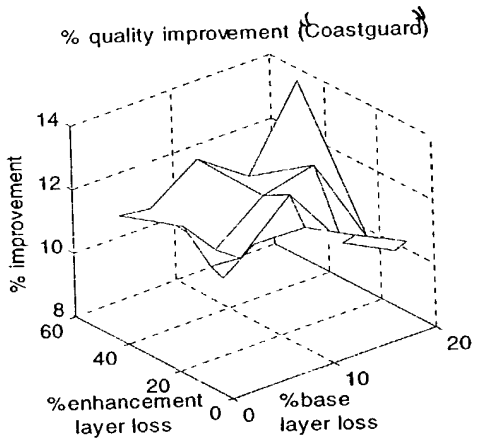
% quality improvement (Coastguard)
% improvement
14
12
10
8
60
40
20
0
%enhancement layer loss
0
10
20
%base layer loss

Fig. 20

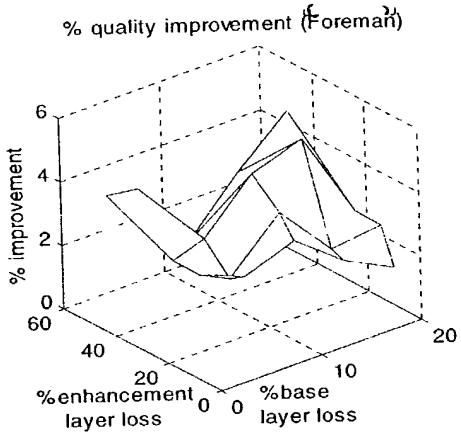
% quality improvement (Foreman)
% improvement
6
4
2
0
60
40
20
0
%enhancement layer loss
0
10
20
%base layer loss

Fig. 21